



Trading Strategies Involving Options

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Session objectives



- Study about various option combinations.
- Understand the rationale for using various trading strategies.
- Put call parity.

Option strategy guide



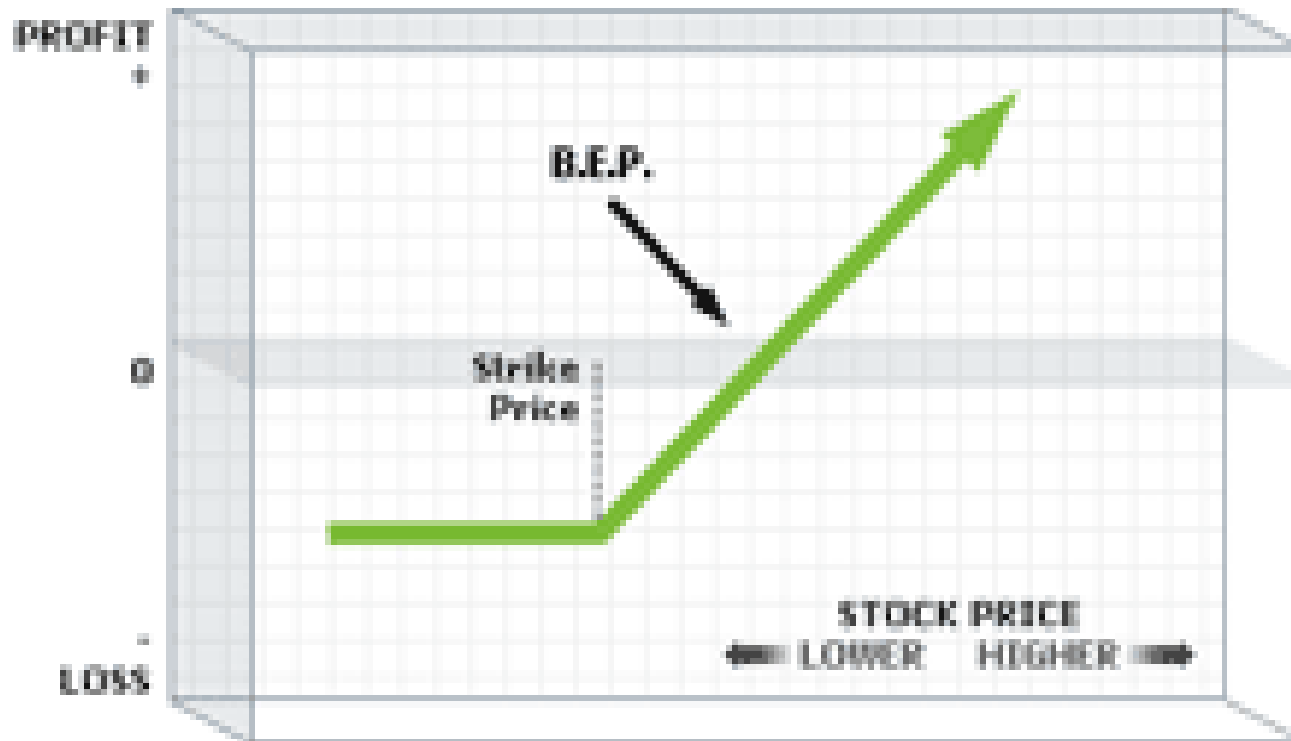
- *What is your outlook on the asset or index that you are interested in?*
- Bullish: Anticipate price rise
- Bearish: Anticipate price fall
- Neutral: No strong move up or down expected
- Volatile: A strong move up or down expected

Option strategy guide (Cont'd)



Bullish	Bearish	Neutral	Volatile
Buy call	Buy put	Sell straddle	Buy straddle
Sell put	Sell call	Sell strangle	Buy strangle
Bull spread	Bear spread	Long butterfly	Short butterfly

Buy call



Buy call (Cont'd)



Strategy View

Investor thinks that the market will rise significantly in the short-term.

Strategy Implementation

Call options are bought with a strike price of a . The more bullish the investor is, the higher the strike price should be.

Upside Potential

Profit potential is unlimited and rises as the market rises.

Breakeven Point at Expiry

Strike price plus premium.

Downside Risk

Limited to the premium paid - incurred if the market at expiry is at, or below, the strike a .

Margin

Not required

Comment

If the market does little then the value of the position will decrease as the option time value falls.



Sell call



Strategy View

Investor is certain that the market will not rise and is unsure/unconcerned whether it will fall.

Strategy Implementation

Call option is sold with a strike price of a . If the investor is very certain of his view then at-the-money options should be sold, if less certain, then out-of-the-money ones should be sold.

Upside Potential

Limited to the premium received - received if the market at expiry is at, or below, the option strike.

Downside Risk

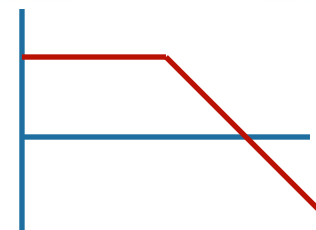
Unlimited. Losses on the position will worsen as the market rises. [If the investor likes the idea of the strategy, but not the downside risk, they might be interested in a bear spread].

Margin

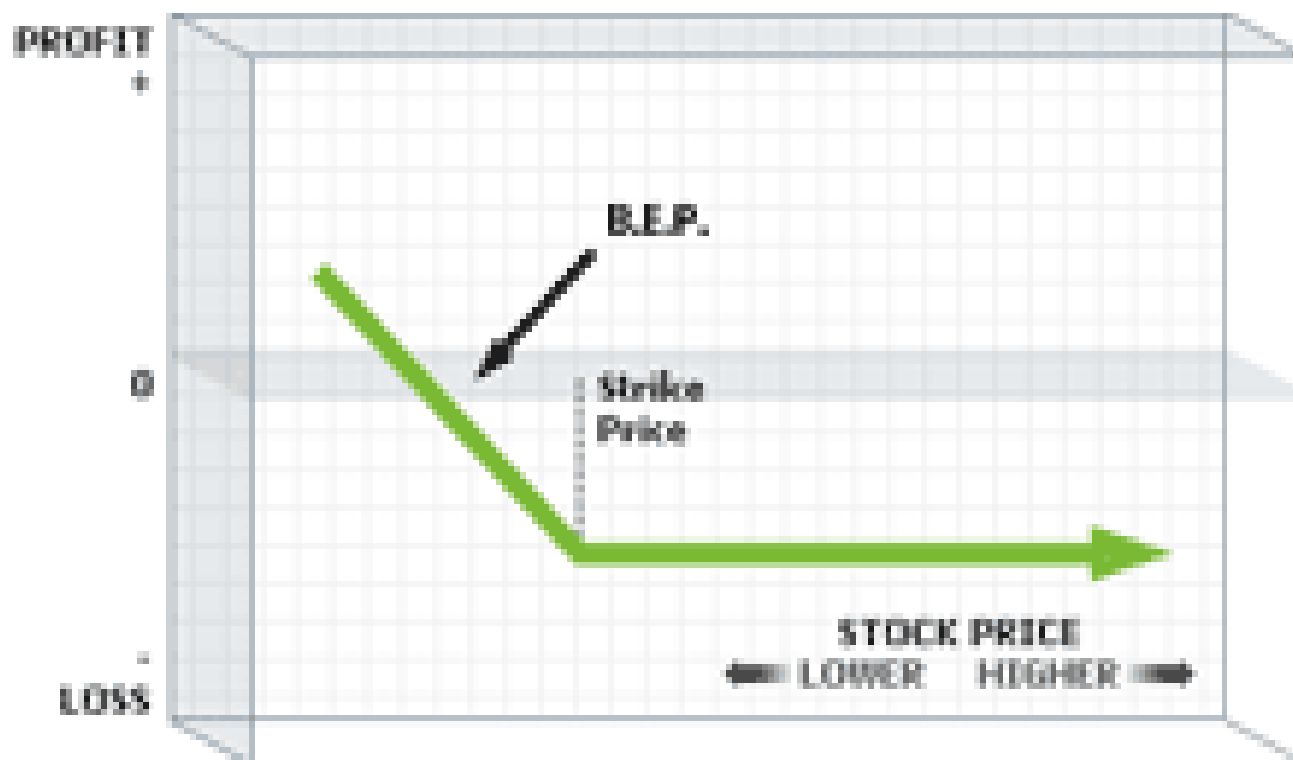
Always required.

Comment

If the market does little, and time passes, this helps as the short position gains when the time value erodes.



Buy put



Buy put (Cont'd)



Strategy View

Investor thinks that the market will fall significantly in the short-term.

Strategy Implementation

Put option is bought with a strike price of a . The more bearish the investor is, the lower the strike price should be.

Upside Potential

Profit potential is unlimited (well, not really unlimited of course as the market can not fall below zero).

Breakeven Point at Expiry

Strike price minus premium paid.

Downside Risk

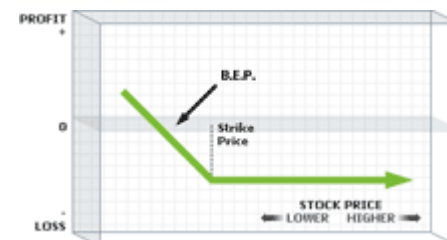
Limited to the premium paid - incurred if at expiry the market is at or above the strike a .

Margin

Not required.

Comment

If the market does little then the value of the position will decrease as the option time value falls.



Sell put



Strategy View

Investor is certain that the market will not go down, but unsure/unconcerned about whether it will rise.

Strategy Implementation

Put options are sold with a strike price a . If an investor is very bullish, then in-the-money puts would be sold.

Upside Potential

Profit potential is limited to the premium received. The more the option is in-the-money, the greater the premium received.

Breakeven Point at Expiry

Strike price less premium.

Downside Risk

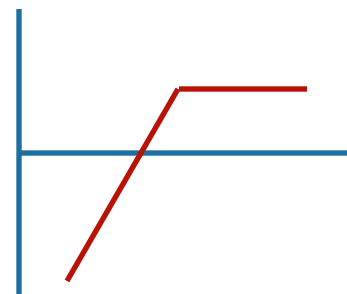
Loss is almost unlimited ("almost" as the underlying price can not fall below zero!). High risk strategy. Potential huge losses incurred if the market crashes. [If the strategy appeals, but not the downside risk, investors may prefer a bull spread].

Margin

Always required.

Comment

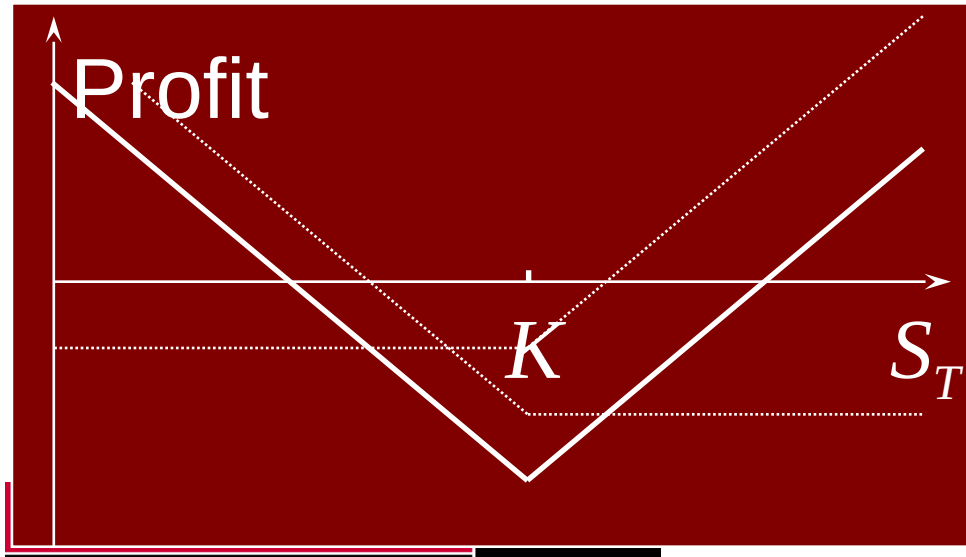
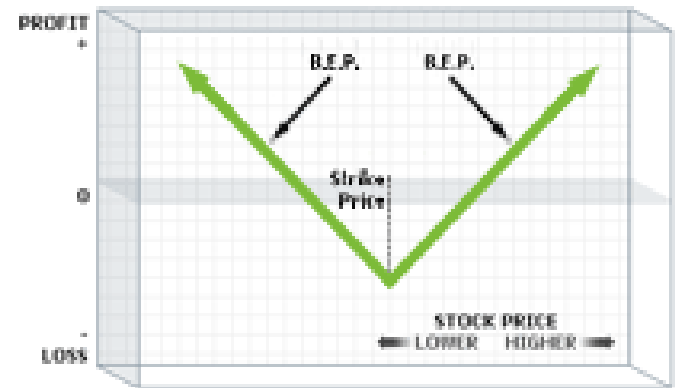
If the market does little, and time passes, this helps as the short position gains when the value erodes.



A straddle combination



- Buy a call and put
- On the same stock
- At the same Strike Price
- Of the same maturity



Buy straddle



Strategy View

Investor thinks that the market will be very volatile in the short-term.

Strategy Implementation

Call option and put option are bought with the same strike price a - usually at-the-money.

Upside Potential

Unlimited.

Breakeven Point at Expiry

Lower point is the strike minus the two premiums paid, and the upper is the strike plus the two premiums.

Downside Risk

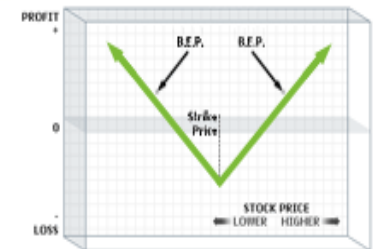
Limited to the two premiums paid. [If the investor would like to decrease the premium paid, a buy strangle might be interesting].

Margin

Not required.

Comment

Position loses value with passage of time as time value decreases on options.



Sell straddle



Strategy View

Investor is certain that the market will not be very volatile (will neither go up nor down very much).

Strategy Implementation

A call option and a put option are sold with the same strike price.

Upside Potential

Limited to the two premiums received - will be realised if market at expiry is exactly at the strike price level.

Breakeven Points

The lower point (b) will be the strike minus the value of two premiums received, the upper point (c) will be the strike plus the two premiums received. [If the investor would like to broaden this band, a sell strangle might be interesting].

Downside Risk

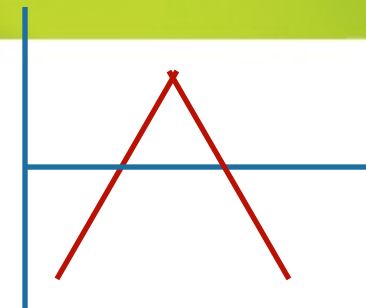
Unlimited - should the market fall or rise greatly.

Margin

Always required.

Comment

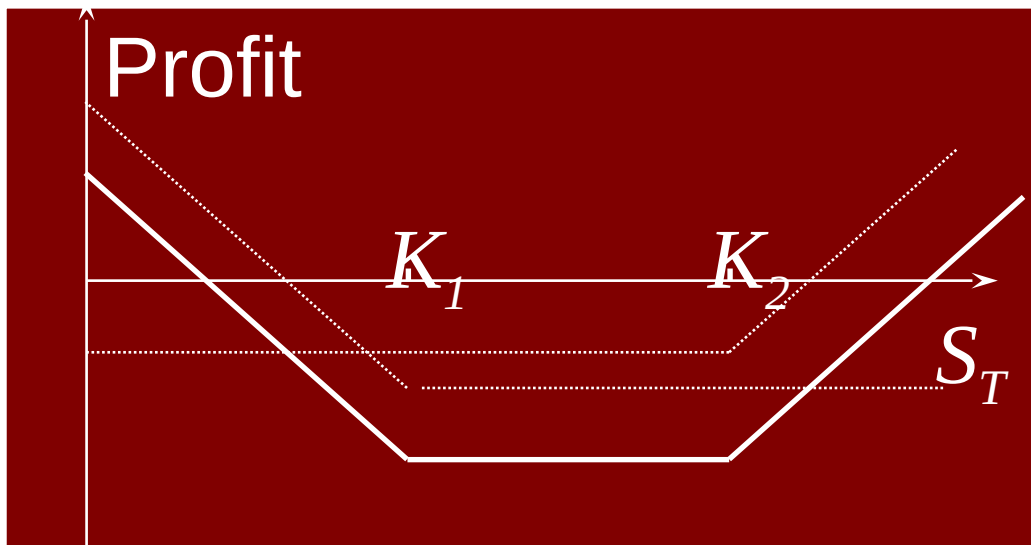
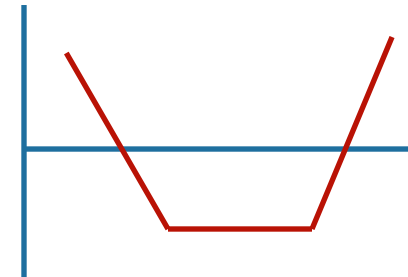
If the market does little then the value of the position will benefit as the short positions gain when the option time value falls.



A strangle combination



- Buy a call and put
- On the same stock
- At different Strike Prices
- Of the same maturity



BUY STRANGLE



Strategy View

Investor thinks that the market will be very volatile in the short-term [this is similar to the buy straddle but the premium paid here is less].

Strategy Implementation

Put option is bought with a strike a and a call option is bought with a strike b .

Upside Potential

Unlimited - should the market fall or rise greatly.

Downside Risk

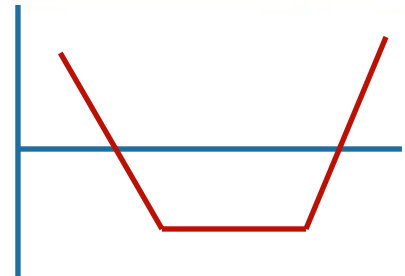
Limited to the two premiums paid. [If the investor would like to reduce the premiums paid still further, a short butterfly might be interesting].

Margin

Not required.

Comment

Position loses value with passage of time as time value decreases on options.



Sell strangle



Strategy View

The investor thinks that the market will not be volatile within a broad band.

Strategy Implementation

Put option is sold with a strike price of a and a call option is sold with the higher strike price b .

Upside Potential

Limited to the two premiums received.

Breakeven Point at Expiry

Lower point (c) will be the lower strike minus the two premiums received, the upper point (d) will be the higher strike plus the two premiums received.

Downside Risk

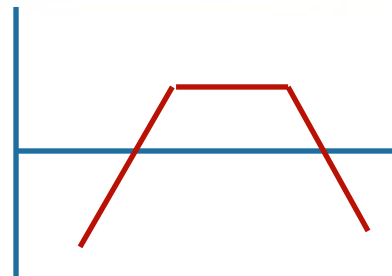
Unlimited - should the market fall or rise greatly. [If the investor likes the strategy, but not the downside risk, a long butterfly might be interesting].

Margin

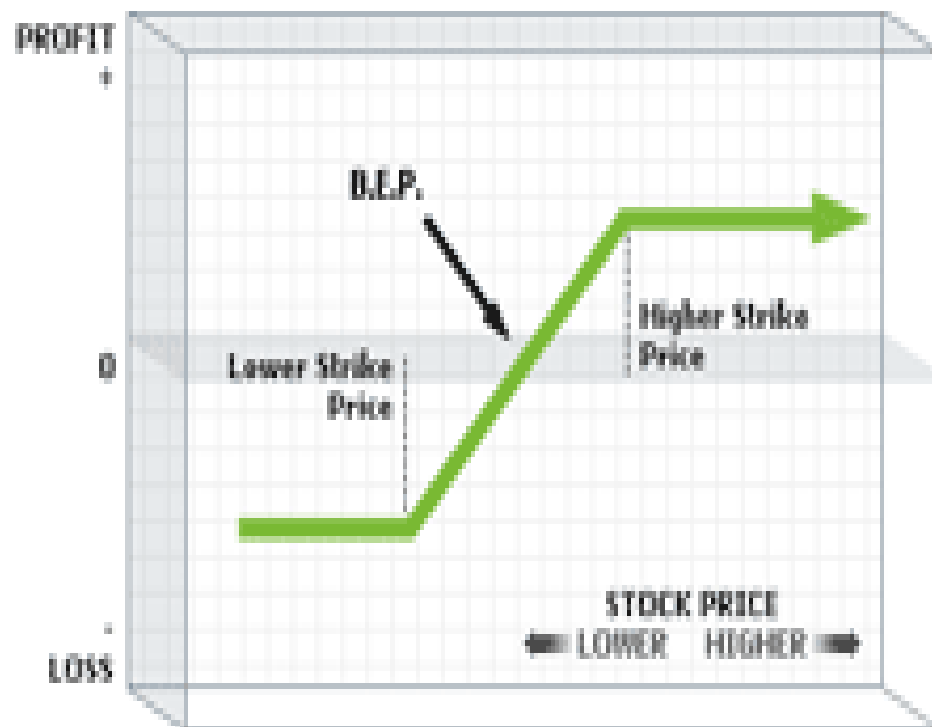
Always required

Comment

If the market does little then the value of the position will benefit as the short positions gain when the option time value falls.



Bull spread using calls



Buy a call on a stock with lower strike price.

Sell a call on a stock with a higher strike price.

Bull spread using calls (Cont'd)



Strategy View

Investor thinks that the market will not fall, but wants to cap the risk. Conservative strategy for one who thinks that the market is more likely to rise than fall.

Strategy Implementation

Call option is bought with a strike price of a and another call option sold with a strike of b , producing a net initial debit,
OR

Put option is bought with a strike of a and another put sold with a strike of b , producing a net initial credit.

Upside Potential

Limited in both cases

Downside Risk

Limited in both cases -

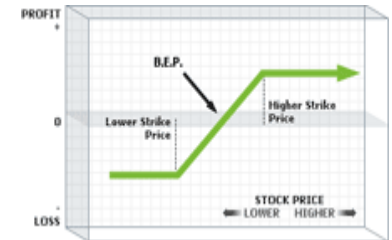
Maximum loss if at expiry market is below the lower strike.

Margin

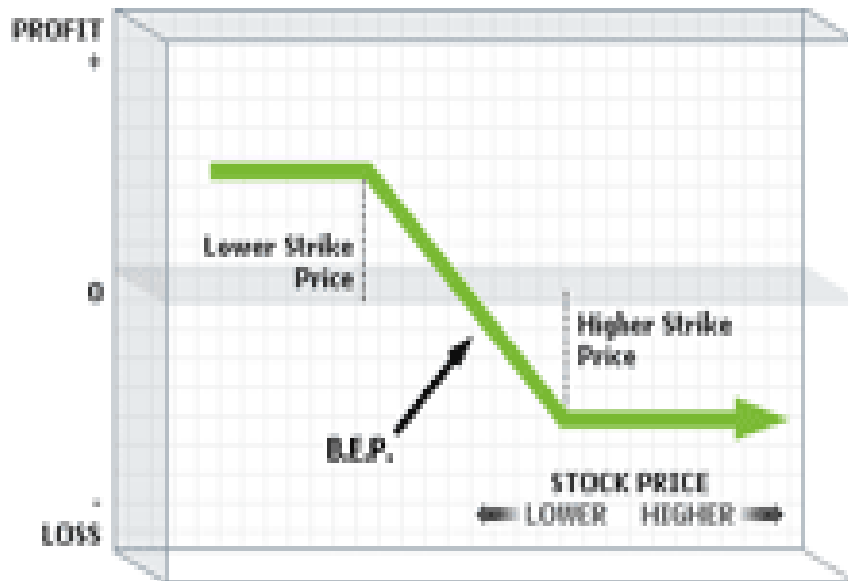
Possibility for margin requirements to be off-set.

Comment

Time value erosion not too significant due to the balanced position.



Bear spread using calls (Cont'd)



Buy a call on a stock with higher strike price.

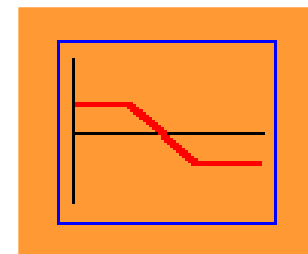
Sell a call on a stock with a lower strike price.

Bear spread using calls (Cont'd)



Strategy View

Investor thinks that the market will not rise, but wants to cap the risk. Conservative strategy for one who thinks that the market is more likely to fall than rise.



Strategy Implementation

Call option is sold with a strike price of a and another call option bought with a strike of b , producing a net initial credit,

OR

Put option is sold with a strike of a and another put bought with a strike of b , producing a net initial debit.

Upside Potential

Limited in both cases.

Downside Risk

Limited in both cases.

Margin

Possibility for margin requirements to be off-set.

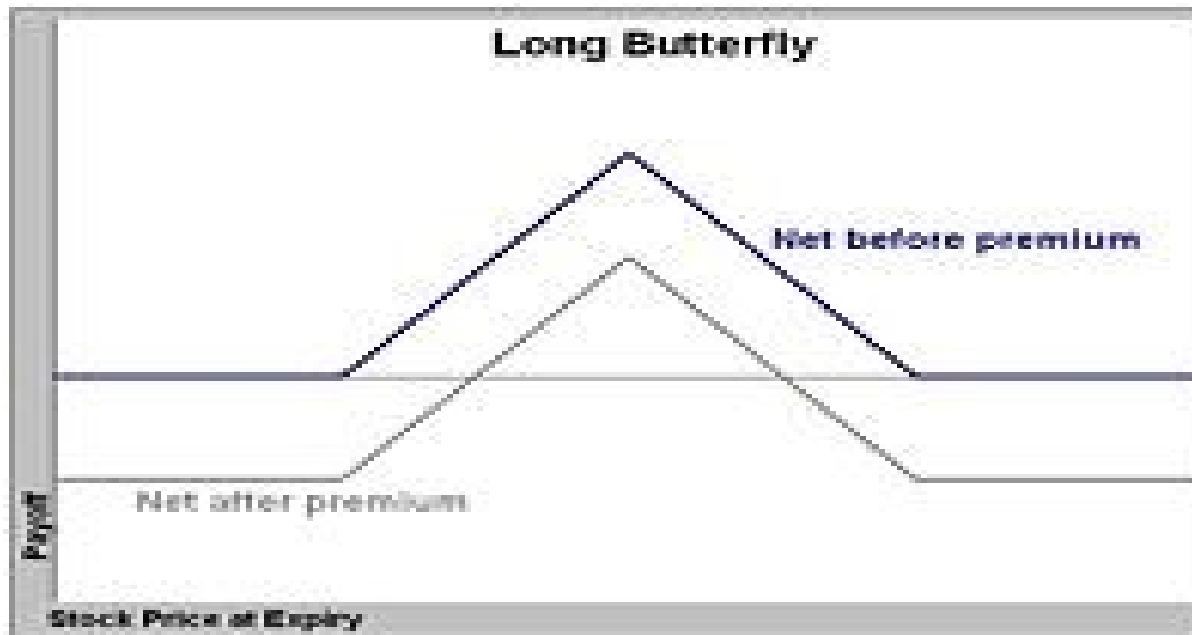
Comment

Time value erosion will be significant due to the balanced position.

Butterfly spread using calls



- Buy a call at a lower exercise price.
- Sell 2 calls at an intermediate exercise price.
- Buy a call at the highest exercise price.



Butterfly spread using calls (Cont'd)

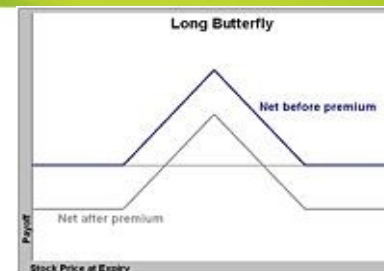


Strategy View

Investor thinks that the market will not be volatile, but wants to cap the downside risk.

Strategy Implementation

Call option with low strike b bought and 2 call options with medium strike a sold and call option with high strike c bought. (The same position can be created with puts, but is less common).



Upside Potential

Limited - to the difference between the lower and middle strikes minus the net debit of establishing the spread.

Downside Risk

Limited to the initial net debit of establishing the spread.

Margin

Margin should be possible.

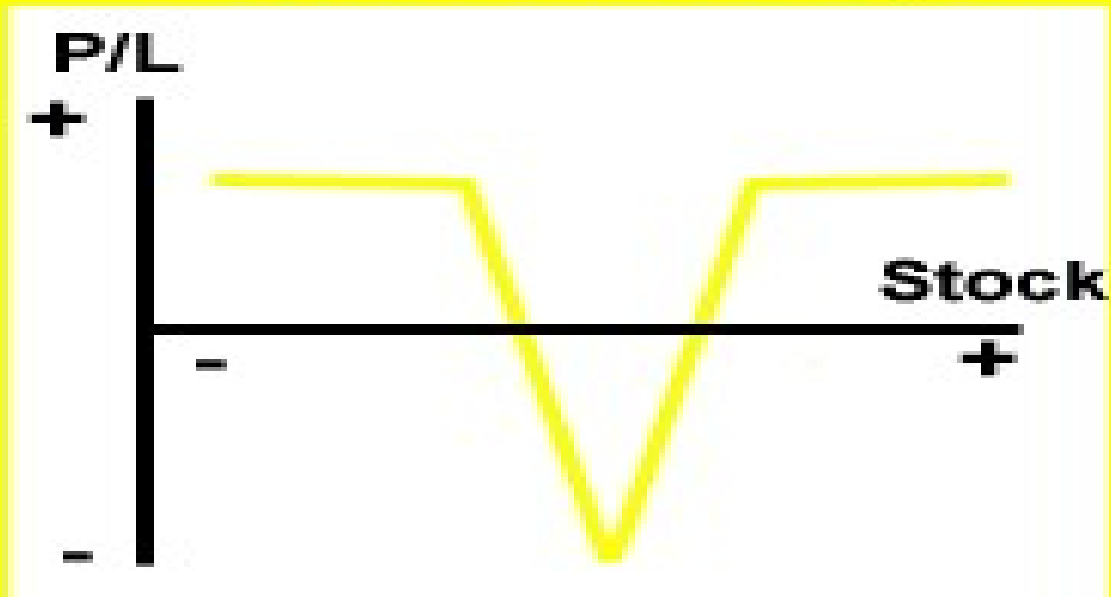
Comment

Can be difficult to execute such strategies quickly.

Selling a butterfly spread



Short Butterfly



Selling a butterfly spread (Cont'd)



Strategy View

Investor mildly thinks that the market will be volatile.

Strategy Implementation

Call option is sold with strike b , two call options are bought with strike a and a call option is sold with strike c . [A similar position can be created with puts].

Upside Potential

Limited to initial credit received.

Downside Risk

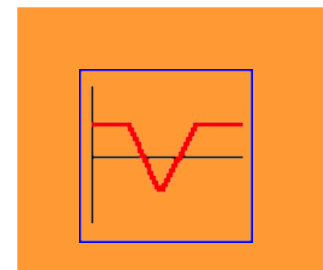
Limited to the difference between the lower and middle strikes minus the initial spread credit.

Margin

Off-set may be available.

Comment

May be difficult to execute this strategy quickly.



Put call parity



- If we accept that there are no arbitrages available in the financial markets, we can use that notion to formulate some basic relationships between calls, puts, the underlying asset, and the risk-free interest rate.
- The one we will examine is Put-Call parity.

Put call parity (Cont'd)



● **Put-Call Parity for European Options**

- This is the most important general relationship between options, the strike price and the underlying asset.
- To get at this we once again form two portfolios:
 - Portfolio A: Call option and cash of $PV(X)$
 - Portfolio B: Put option and one unit of the underlying.
- The outcome of these two strategies can be summarized as follows:

Put call parity - outcomes



Cost	Strategy 1 (Put + Stock) ($V_p + P_s$)	Strategy 2 (Call + Cash) ($V_c + PV(X)$)
Value at expiration		
Stock price > Exercise price	Put option worthless. The investor ends up owning a share of stock	Bank balance of X used to exercise call. The investor ends up owning a share of stock.
Stock Price < Exercise price	Exercise put. Investor ends up with cash equal to X	Call option expires worthless. Investor ends up with bank balance equal to X

Put call parity



- Since the two strategies have the same ending values they should also have the same initial cost i.e.

$$V_p + P_s = V_c + PV(X)$$

$$V_p + P_s = V_c + Xe^{-rt}$$

Recap



In a Strangle

- A. Put and call have different exercise prices.
- B. Call and put have same exercise price.
- C. Call and put have different expiry date.
- D. Put and call are not involved.

Ans : A

Recap



Straddles is a trading strategy mainly used when the market is

- A. Bullish
- B. Bearish
- C. Volatile
- D. Stable

Ans : C



THANK YOU